

CLAIMS

1. An isolated nucleic acid comprising a promoter having a sequence of SEQ ID NO: 1, wherein the promoter has stem-regulated promoter activity.

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2. An isolated nucleic acid comprising a promoter having a sequence at least 65% homologous with SEQ ID NO: 1, wherein the promoter has stem-regulated promoter activity.

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3. An isolated nucleic acid comprising an OMT promoter and an exogenous nucleic acid, wherein the OMT promoter is operable to drive stem-regulated expression or transcription of the exogenous nucleic acid.

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4. The nucleic acid of Claim 3, wherein the OMT promoter is further operable to drive upregulated stem-regulated expression or transcription in the presence of a defense-inducing agent.

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5. An expression vector comprising, in a 5' to 3' direction:

an OMT promoter;

an exogenous nucleic acid; and

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a 3' termination sequence.

6. The expression vector of Claim 5, wherein the exogenous nucleic acid comprises a transgene.

5           7. A plant cell comprising an expression vector having:

an OMT promoter;

an exogenous nucleic acid; and

a 3' termination sequence.

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8. The plant cell of Claim 7, wherein the exogenous nucleic acid comprises a transgene.

9. The plant cell of Claim 7, wherein the exogenous  
15 nucleic acid alters carbon metabolism in the plant cell when expressed or transcribed.

10. The plant cell of Claim 7, wherein the exogenous nucleic acid encodes an insecticide effective against at  
20 least one stem-boring insect.

11. A plant comprising an expression vector having:

an OMT promoter;

an exogenous nucleic acid; and

a 3' termination sequence,

wherein expression of the exogenous nucleic acid is stem-regulated .

5        12. The plant of Claim 11, wherein expression of the exogenous nucleic acid is upregulated by the presence of a defense-inducing agent.

10        13. The plant of Claim 11, wherein the exogenous nucleic acid alters carbon metabolism in the plant cell when expressed or transcribed.

15        14. The plant of Claim 11, wherein the exogenous nucleic acid encodes an insecticide effective against at least one stem-boring insect.

15        15. The plant of Claim 11, wherein the plant is a monocot.

20        16. The plant of Claim 11, wherein the plant is selected from the group consisting of: sugarcane, sorghum, rice, maize and any hybrids thereof.

25        17. A bacterial cell comprising an expression vector having:

an OMT promoter;  
an exogenous nucleic acid; and  
a 3' termination sequence.

5        18. A method of directing stem-regulated expression  
of a nucleic acid in a plant comprising:

providing an expression nucleic acid having an OMT  
promoter, an exogenous nucleic acid and a 3' termination  
sequence; and

10       transforming a plant with the expression nucleic acid;  
wherein expression of the exogenous nucleic acid is  
stem-regulated.

15       19. The method of Claim 18, further comprising  
providing the expression nucleic acid in an expression  
vector.

20       20. The method of Claim 18, wherein transforming  
further comprises gene gun/biolistic-mediated  
transformation.

21. The method of Claim 18, wherein transforming  
further comprises *Agrobacterium*-mediated transformation.

22. The method of Claim 18, further comprising transforming an embryonic callus.

23. The method of Claim 22, further comprising  
5 regenerating a plant from the embryonic callus.

24. The method of Claim 18, further comprising transforming a plant cell.

10 25. The method of Claim 18, further comprising breeding progeny of the transformed plant.

26. A method of directing stem-regulated expression of a nucleic acid in a plant comprising:

15 providing an expression nucleic acid having an OMT promoter, an exogenous nucleic acid and a 3' termination sequence; and

transforming a plant with the expression nucleic acid;

wherein expression of the exogenous nucleic acid is  
20 induced by a defense-inducing agent.

27. The method of Claim 26, further comprising providing the expression nucleic acid in an expression vector.

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28. The method of Claim 26, wherein transforming further comprises gene gun/biolistic-mediated transformation.

5        29. The method of Claim 26, wherein transforming further comprises *Agrobacterium*-mediated transformation.

30. The method of Claim 26, further comprising transforming an embryonic callus.

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31. The method of Claim 30, further comprising regenerating a plant from the embryonic callus.

15        32. The method of Claim 26, further comprising transforming a plant cell.

33. The method of Claim 26, further comprising breeding progeny of the transformed plant.

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